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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/192,674 11/16/98 BAGNI

D PHN-16.762

US PHILIPS CORPORATION
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WM31/0228

EXAMINER

CHEN, W	
ART UNIT	PAPER NUMBER

2624

DATE MAILED:

02/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/192,674

Applicant(s)

Bagni et al

Examiner

Wenpeng Chen

Group Art Unit

2624



☒ Responsive to communication(s) filed on Jan 16, 2001

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-9 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-9 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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Examiner's responses to Applicant's remark

1. Applicants' arguments filed on 1/16/2001 with respect to art rejection to all the pending claims have been considered but are moot in view of the new ground(s) of rejection due to the amendments. The Examiner agreed that the "ITU-T Draft H.263" reference does not teach the amended features related to the inserted phrase "every occurrence" as recited.

The amendment overcomes the objection to specification, Claim Objections, and 35 USC § 101 rejection set forth in previous action paper #10.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (US patent 5,731,840) in view of Fujinami (US patent 5,337,086) and de Haan et al. (US patent 5,148,269 listed in IDS paper #7.)

With regard to the coding claims, Kikuchi teaches a device and method comprising the following means and corresponding steps for:

- estimating first motion vectors (MV *c*, MV *l*, MV *r*, MV *a*, MV *b*) for first objects of a large size; (Fig. 25, 28, and 33A and passages explaining the figures; column 11, lines 8-25 and 37-52; column 46, lines 18-65; A motion vector is determined for each block of size 16*16.)

- filtering every occurrence of the first motion vectors (MV *c*, MV *l*, MV *r*, MV *a*, MV *b*) using a set of motion vectors including the first motion vectors to obtain second motion vectors (MV 1, MV 2, MV 3, MV 4) for second objects, the second objects being smaller than the first objects; (column 46, lines 18-65; The example given in Fig. 33A is for obtaining the small-region prediction motion vector MV2. The determinations of MV 1, MV 3, and MV 4 are inherently taught.)

- generating prediction errors in dependent on the second motion vectors; (column 46, lines 18-65; the difference motion vector)

- combining the first motion vectors and the prediction errors; (Column 37, line 44 to column 38, line 24; Fig. 25; The VLC 111, MVC 131, and Mux 110 perform the combining step.)

- generating first motion vectors (MV *c*, MV *l*, MV *r*, MV *a*, MV *b*) and prediction errors from input stream, the first motion vectors (MV *c*, MV *l*, MV *r*, MV *a*, MV *b*) relating to

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the first objects of a large size; (Fig. 27, 30, and 33A and passages explaining the figures; column 11, lines 8-25 and 37-52; column 46, lines 18-65; A motion vector is determined for each block of size 16×16 .)

-- filtering every occurrence of the first motion vectors (MV_c , MV_l , MV_r , MV_a , MV_b) using a set of motion vectors including the first motion vectors to obtain second motion vectors (MV_1 , MV_2 , MV_3 , MV_4) for second objects, the second objects being smaller than the first objects; (column 46, lines 18-65; The example given in Fig. 33A is for obtaining the small-region prediction motion vector MV_2 . The determinations of MV_1 , MV_3 , and MV_4 are inherently taught.)

-- generating an output signal in dependence on the prediction errors and the second motion vectors; (output 327 of Fig. 27)

-- means for receiving a motion-compensated predictively encoded image signal; (column 51, lines 32-56; Fig. 41; Fig. 41 is a multi media apparatus that stores encoded information in the medium 1107.)

-- means for displaying the decoded image signal. (column 51, lines 32-56; Fig. 42; Fig. 42 is a signal display apparatus that displays decoded information in video output section 1205.)

However, Kikuchi does not teach that the first objects have a size of 16×16 and the second objects have a size of 8×8 .

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Fujinami teaches deriving motion vectors in macroblocks and their subblocks. (Figs. 2-3)
It is well known that the macroblock has a size of 16×16 in the video coding/decoding standard.
Thus, the subblocks have a size of 8×8 .

It is desirable to have a method that is compatible with an industrial standard. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Fujinami's teaching to Kikuchi's method to apply the latter to have the first objects of 16×16 size and the second objects of 8×8 size, because the combination makes Kikuchi's method compatible with an industrial standard.

Kikuchi further teaches various filtering processes involving various adjacent large regions. (Column 46, lines 32-39)

However, the method taught by the combination of Kikuchi and Fujinami does not teach (1) using the specific set of first motion vectors only and (2) the specific filtering step recited in Claim 2.

The de Haan patent teaches filtering steps further comprising:

-- filtering every occurrence of the first five motion vectors (MV c, MV l, MV r, MV a, MV b) to obtain second motion vectors (MV 1, MV 2, MV 3, MV 4) for second objects, the second objects being smaller than the first objects; (column 3, lines 1-49)

- providing x and y motion vector components of a given macroblock (MVc) and macroblocks (MV l, MV r, MV a, MV b) adjacent to the given macroblock (MVc); (column 3, lines 1-49)

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- supplying for each block (MV 1) of a number of blocks (MV 1, MV 2, MV 3, MV 4) corresponding to the given macroblock (MVc), x and y motion vector components respectively selected from the x and y motion vector components of the given macroblock (MVc) and from the x and y motion vector components of two blocks (MV l, MV a) adjacent to the block (MV 1). (column 3, lines 1-49)

It is desirable to code and decode a signal with operation flexibility with various filtering processes as explicitly indicated in Kikuchi's patent. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to add de Haan's filtering processes for motion vectors in the method and system taught by the combination of Fujinami and Kikuchi because the overall combination provides more operation flexibility.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is (703) 306-2796.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700 or 4750.

The art unit fax number is (703) 306-5406.

Wenpeng Chen

February 26, 2001

WENPENG CHEN
PATENT EXAMINER

